

WINDSUN: Weather INformation Display Systems for UAS in the NAS, Phase I

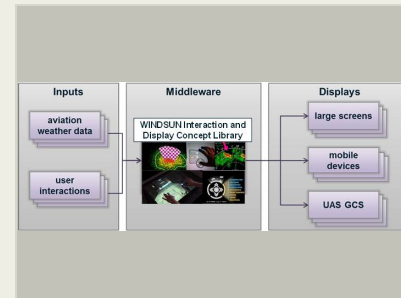
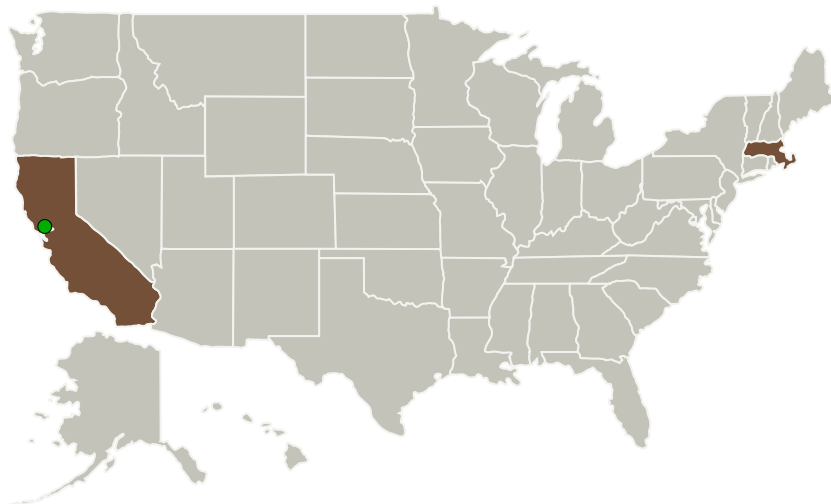
Completed Technology Project (2013 - 2013)



Project Introduction

NASA is leading a large-scale effort to conduct research, develop standards, and integrate technologies to facilitate the insertion of Unmanned Aircraft Systems (UAS) into the National Airspace System (NAS). One area of development to support this effort is the adaptation of existing weather technologies for manned cockpits for use in UAS ground control stations (GCSs). However, the lack of a defined concept of operations (ConOps) and specific GCS technologies for UAS integration in the NAS present challenges for proposed weather information systems. Aptima proposes to develop WINDSUN (Weather Information Display System for UAS in the NAS) as a flexible system architecture and innovative library of platform-agnostic interaction methods to support integration with various ConOps and GCS technologies. A successful Phase I effort will include: (1) a use case with a ConOps to define the core set of tasks around which the design is built; (2) an innovative system architecture that is adaptable to multiple workflows; (3) user interface designs for interaction and visualization; (4) a demonstrable proof of concept physical prototype; and (5) transition plans (implementation, evaluation, and commercialization) for WINDSUN. Phase II efforts, including (1) GCS integration, (2) experimental evaluation, and (3) transition to operational environments.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Aptima, Inc.	Lead Organization	Industry	Woburn, Massachusetts
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Massachusetts

Project Transitions

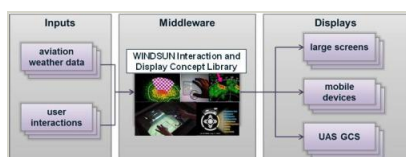
▶ **May 2013:** Project Start

✓ **November 2013:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138572>)

Images



Project Image

WINDSUN: Weather INFORMATION Display Systems for UAS in the NAS
(<https://techport.nasa.gov/image/128905>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Aptima, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

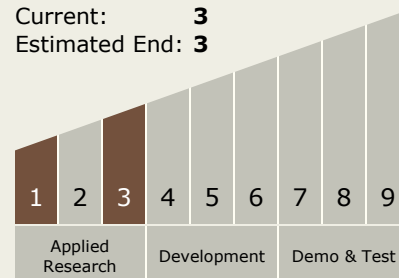
Carlos Torrez

Principal Investigator:

Ronald Storm

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
 - └ TX16.4 Architectures and Infrastructure

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System